REMARKS

Claims 1 – 9, 11, 13 and 14 are now pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1 – 14 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Badillo et al. (U.S. Pat. No. 6,770,009). This rejection is respectfully traversed.

At the outset, Applicant notes that claims 10 and 12 have been cancelled without prejudice or disclaimer of the subject-matter contained therein. Accordingly, the rejections of claims 10 and 12 have been rendered moot.

Claims 1 and 6, as amended herein, include generating a load signal based on an anticipated driver torque demand and adjusting one of spark timing of the engine and an ECC pressure based on the load signal prior to engagement of the ECC to minimize an anticipated engine RPM droop. Badillo fails to teach or suggest generating a load signal based on an anticipated driver torque demand and adjusting one of spark timing of the engine and an ECC pressure based on the load signal prior to engagement of the ECC to minimize an anticipated engine RPM droop.

Badillo discloses a system for controlling engine speed during vehicle launch. The system determines a base spark timing (SA_b) of the engine and modifies the base spark timing based on a rate of change of the engine speed (RPM). More specifically, a spark timing offset (SA_{offset}) is determined based on the rate of change of the engine RPM and a new spark timing (SA_{new}) is determined as the difference between the base

spark timing and the spark timing offset (Col. 7, Lines 62 – 65). The engine is regulated based on the new spark timing throughout the entire vehicle launch (Col. 6, Lines 54 – 55). Badillo further determines a torque reserve of the engine, which is determined based on an absolute number or a percentage from MBT (Col. 7, Lines 14 – 16). The torque reserve enables the engine torque to be increased or decreased based on advancing and retarding the spark timing respectively (Col. 7, Lines 7 – 8 and 18 – 20).

The present invention provides an anticipatory control to minimize an anticipated engine RPM droop during vehicle launch. The system of Badillo is reactionary in that it regulates engine RPM after a fluctuation is detected. To provide an anticipatory control system, the present invention, as claimed, differs from that disclosed in Badillo on the following points:

a) Badillo fails to teach or suggest determining an engine load based on an anticipated driver torque demand. More specifically, the torque reserve disclosed in Badillo is a set value that is determined based on MBT, which is fixed for a given engine. Thus, the torque reserve is fixed and cannot be characterized as an anticipated driver torque demand, which varies based on driver input.

b) Badillo monitors the time rate of change of the engine RPM and adjusts the spark timing based on the time rate of change of the engine RPM. As a result, the system of Badillo reacts to a fluctuation in engine RPM by correcting for the fluctuation, after the fluctuation has occurred.

The present invention prevents such an engine RPM fluctuation from ever occurring by adjusting one of the spark timing and the rate of clutch engagement before the clutch is engaged.

Because the system of Badillo regulates spark timing solely based on the rate of change of the engine speed throughout vehicle launch, Badillo fails to teach or suggest generating a load signal based on an anticipated driver torque demand and adjusting the spark timing based on the load signal prior to engagement of the ECC. Further, Badillo fails to teach or suggest adjusting the ECC pressure based on the load signal. Accordingly, claims 1 and 6 define over the prior art. Therefore, reconsideration and withdrawal of the rejections are respectfully requested.

Claims 1 – 5 and 7 – 9 each ultimately depend from one of claims 1 and 6, which define over the prior art, as discussed in detail above. Therefore, claims 1 – 5 and 7 – 9 also define over the prior art for at least the reasons stated with respect to claims 1 and 6, and reconsideration and withdrawal of the rejections are respectfully requested.

Claim 11, as amended herein, includes detecting imminent engagement of the ECC, generating a load signal based on an anticipated driver torque demand upon detecting imminent engagement of the ECC and adjusting spark timing of the engine based on the load signal prior to the imminent engagement of the ECC. Badillo fails to teach or suggest detecting imminent engagement of the ECC, generating a load signal based on an anticipated driver torque demand upon detecting near full engagement of the ECC and adjusting spark timing of the engine based on the load signal prior to the imminent engagement of the ECC.

As discussed in detail above, the system disclosed in Badillo reactively adjusts engine spark timing based on the rate of change of the engine RPM. As also discussed in detail above, Badillo fails to teach or suggest determining an engine load based on an anticipated driver torque demand. More specifically, the torque reserve disclosed in Badillo is a set value that is determined based on MBT, which is fixed for a given engine. Thus, the torque reserve is fixed and cannot be characterized as an anticipated driver torque demand, which varies based on driver input.

Further, Badillo expressly states that detecting imminent engagement of the ECC (i.e., the "kiss point") is undesired because this would require slow clutch engagement, which is "unsatisfactory", resulting in excessive clutch slippage (Col. 3, Lines 14 – 18). Therefore, Badillo fails to teach or suggest detecting imminent engagement of the ECC and adjusting spark timing of the engine based on the load signal prior to the imminent engagement of the ECC. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Claims 13 and 14 each depend from claim 11, which defines over the prior art, as discussed in detail above. Therefore, claims 13 and 14 also define over the prior art for at least the reasons stated with respect to claim 11, and reconsideration and withdrawal of the rejections are respectfully requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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